Section 1 MANAGEMENT OF CHANGE (MOC)					ABU: Plant:			Year:		
MOC	C No: Originator		Date Issued:	Passport No:	EWC	No:	D&R		4 Crude	2011
	255 Lee II, Gerald		11/22/2011							
	2 Reviewer: MOC Cate		PSM:		MOC Type:	E	xpiration Date:	Other 7	Temporary Reason	
	do, Silvano E. S/D	*			Temporary		12/31/2016		. ,	
Project/Eq	uipment Title: UT Monitor 8"	4 S/C Pi	oing from C-1100	to P-1149/A (95		1.				
Description	n of Change:		-		······································					
	s will monitor 8" 4 SIDECUT 9	55-007-0	01 piping circuit th	nickness from C	-1100 to P-114	9/A and r	replace as need	ed at ne	ext S/D opportunity.	
MOC will b	e required if the change will:									
☐ Caus	se the use of different feed, ch	emicals (or catalysts?							
Caus	se the use of different process	condition	ns, process contro	ol, instrumentation	on, and protect	ive device	es or affect upst	ream/do	wnstream plants?	
Caus	se the use of new or modified o	equipme	nt (which is other t	than inkind]?						
☐ Alter	r equipment siting, building, tra	ler locat	ions, roads or fire	protection?						
Requ	uire modifying existing and/or o	levelopir	g new procedures	s?						
Section 2						Sim	ultaneously Beg	in Cons	struction and Start-u	qι
Stage	B. 11		Dept./Pe	rson	Date					
1	Pre-Implementation		Respon	sible	Complete		Completed By		Referenc	es
	Design Review		Gish, Kurt E.							
ĺ	Process Engineering Review									
	Instrumentation Review									
ŀ	Control System Review									
	Utilities Review									
	Environmental/Regulatory Review									
•	Safety/Regulatory Review									
	Building Permits Review									
	Mechanical Review		Leeds, Laura		1/5/2012	Leeds,				-
	Inspection Review		 		12/2/2011		gard, John T.			
l	Metallurgy Review		Prasad, Praneil	-Maharaj	#########	Prasad, Praneil-Maharaj				
	Contruction Review					ļ			·	•
	Leak Seal Review									
	Relief System Review Infrastructure Review									f. (c.
			<u> </u>			:				
	PHA/HSE Review		Preciado, Silva	no E.	`					
Authoriza	ation to Implement Change (Be	gin Con	struction): A	pprover:				Date:		
6.	<u> </u>		Dept./Pe	reon	Date	I				
Stage 2	Pre-Startup		Respons		Complete	l •	Completed By		Reference	es
_	Procedures Review									
	Communication/Training									
	Pre Start-up Safety Review									
				-						
Authoriza	ation to Start-Up Change:		<u> </u>	oprover:				Date:		
								T-		
Extension Approve	on of Temporary Change ed By:	Apr	orover:			Expira	ation Date:	Exte	ntion Reason	
Stage	Post-Startup		Dept./Pe		Date		Completed By		Reference	 es
3	Communication/Training		Respons	SIDIE	Complete				1.0.0.0.0	
	Process Safety Information									
L	1				<u>. </u>	<u> </u>			L	
	in Place - Reviews,	Appro	over:			Date:				
Docume	ntation & Testing Complete	L				<u> </u>				
MOC C	ancelled:	Appro	over:			Date:				
		Cano	ellation Reason	· ·						
Note 1:	Emergency request for ch	ance ch	ould be routed	hy the Annroy	er on the nev	working	n day I Dot	in Origin	nal in Division for five	Voore
Note 1.	Emergency request for cit	ange Si	iodia de fouteu :	by the Approve	or on the next	. MOLKING	y day Rela	an Ongli	IOI III DIVISIUII IUI IIVE	ı caıs

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Gish, Kurt E.
Completed by	
Date Completed	
·	

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness to	from C-1100 to P-1149/A	A and replace as needed at next S/D opportunit	у.	

*When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Gish, Kurt E.
Completed by	•
Date Completed	

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 pip	•	
·		
•		

•
•
•

When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

Page 2 of 3

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Gish, Kurt E.
Completed by	
Date Completed	

Project/Equipment Description:

nspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.					
, , , , , , , , , , , , , , , , , , , ,	•	•••			
	· · · · · · · · · · · · · · · · · · ·		•		

*When possible include copies of documents referenced in the summary.

MECHANICAL & Q.A. REVIEW CHECKLIST

You have been assigned a Mechanical & Q.A. Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Leeds, Laura
Completed By	Leeds, Laura
Date Completed	1/5/2012

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.

MECHANICAL:	Q.A.:
☐ Alarm/Sampling Requirements	☐ ASTM Standards
☐ Civil/Structual Engineering Requirements	☐ Control & Monitoring Requirements
☐ Electrical Engineering Requirements	☐ Fitness for Service Evaluation
☐ Instrument/Control Engineering Requirements	☐ Honeywell Process Simulator
	☐ IMI Machinery Condition
☐ Normal Control Requirements Equipment Specification and Rating	☐ Mechanical Integrity
Relief and Pressure Relief Devices Setting and Capacity	☐ Mechanical Integrity Program
Utilities Connection Permits	☐ MFG-5545, Drafting Work Request attached, if required
	☐ Positive Materials Indentification
REQUIREMENT:	Preventative Maintenance Requirement
☐ API Standards	☐ Pre Start-up Safety Review
☐ ASME Codes & Standards	☐ Process Safety Information Limits
✓ Inspection/Monitoring Requirements	☐ SOCO Tags
☐ Process Flow/Piping Drawings	UT Testing

SUMMARY OF REVIEW*

External inspection of piping has not been reliable in the past for predicting thickness and failure rates at these temperatures. Recommended that external corrosion probes with wireless technology be installed on line for continuous data collection.

Consistently monitoring 4S/C piping is better than random API inspection. But continous corrosion probes should be installed at earliest convenience for future S/D input

 $\mbox{\ensuremath{^{\star}}}\mbox{\ensuremath{When}}$ possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

INSPECTION REVIEW CHECKLIST

You have been assigned a Inspection Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255	· ·
Filing Reference		
Person Responsible	Beauregard, John T.	
Completed By	Beauregard, John T.	
Date Completed	12/2/2011	

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.						
			•			

INSPECTION:		
Additional Surveillance Required		
☐ API Standards		
☐ ASME Codes & Standards		
☐ ASTM Standards		
Control Monitoring Requirements		
☐ Electrical Inspection		
☐ Fitness for Service Evaluation		
☐ Honeywell		
☐ Honeywell Process Simulator		
☐ Inspection/Monitoring Requirements		
☐ Non-Destructive Examination	,	
☐ Normal Control Requirements		
☐ Positive Materials Indentification		
☐ Relief and Pressure Relief Devices Setting and Capacity		•
Texas Nuclear (Metallurgy)		
UT Testing		
☐ VOC Tagging Requirements		
•		

SUMMARY OF REVIEW*

Inspection will provide a drawing with monitoring locations.

For the P-1149 suction piping t(min):

- 1.8" pipe:
- a.Pressure t(min) = 0.018 inch
- b.Structural t(min) = 0.036 inch
- 2.10" pipe:
- a.Pressure t(min) = 0.022 inch
- b.Structural t(min) = 0.036 inch

So, I would use the 0.036 inch as the ultimate t(min) for this section of pipe. If piping get below 0.100 inches, we should consider some sort of clamp or wrap. After talking to inspections, this might also be a good location for a corrosion probe.

Hope this helps,

If you have any questions, please do not hesitate to contact me.

Thanks for the help, Patrick Murphy

*When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

METALLURGY REVIEW CHECKLIST

You have been assigned a Metallurgy Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Prasad, Praneil-Maharaj
Completed by	Prasad, Praneil-Maharaj
Date Completed	11/28/2011

Refinery Process Stream: #4 Sidecut Service Description: Hydrocarbons Process: Hydrocarbon Other:	ressure: ressure: fication: Other:
Process: Hydrocarbon Other: Operating Tempature: Operating F Design Tempature: Piping Classi Equipment Product Type: Connection for Piping Specification: Piping Specification Comment:	ressure: ressure: fication: Other:
Service Description: Hydrocarbons Process: Hydrocarbon Other: Operating Tempature: Operating F Design Tempature: Piping Classi Equipment Product Type: Connection for Piping Specification: Piping Specification Comment:	Pressure: Pressure: Pressure: Other: Other:
Service Description: Hydrocarbons Process: Hydrocarbon Other: Operating Tempature: Operating F Design Tempature: Piping Classi Equipment Product Type: Connection for Piping Specification: Piping Specification Comment:	Pressure: Pressure: Pressure: Other: Other:
Service Description: Hydrocarbons Process: Hydrocarbon Other: Operating Tempature: Operating E Design Tempature: Piping Classi Equipment Product Form: Piping Specification: Piping Specification Comment:	Pressure: Pressure: Pressure: Other: Other:
Service Description: Hydrocarbons Process: Hydrocarbon Other: Operating Tempature: Operating F Design Tempature: Piping Classi Equipment Product Type: Connection for Piping Specification: Piping Specification Comment:	Pressure: Pressure: Pressure: Other: Other:
Process: Hydrocarbon Other: Operating Tempature: Operating F Design Tempature: Piping Classi Equipment Product Form: Piping Classi Equipment Product Type: Piping Specification: Piping Specification Comment:	ressure: ressure: fication: Other:
Other: Operating Tempature: Design Tempature: Product Form: Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	Pressure: Pressure: Cressure: Country of the coun
Operating Tempature: Design Tempature: Product Form: Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	ressure: ressure: Other:
Design Tempature: Design F Product Form: Piping Classi Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	ressure: fication: Other:
Product Form: Piping Classi Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	fication: Other: Other:
Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	Other:
Equipment New Material Type: Connection for Piping Specification: Piping Specification Comment:	Other:
Connection for Piping Specification: Piping Specification Comment:	
Piping Specification Comment:	
Piping Specification Comment:	☐ Stress Relieved
	and time
Exchanger Bundle (Check all Applicable)	
☐ U-Bend Tube Bundle ☐ U-Bend Area Stress Relieved	
☐ Finned Tube Bundle ☐ Finned Area Stress Relieved	? •
☐ Straight Tube	
☐ Tube Sheet and tubes made of different alloys? Explain: Cladded Tube sheet. Which side is clad?	
Other	
□ Other	
Specification Change:	
Other: Manual field data has been historically inaccurate due to the	e elevated temperatures. Recommend using

Tuesday, August 07, 2012 *When possible include copies of documents referenced in the summary.

APPENDIX I PRE-START-UP SAFETY REVIEW FOR MAINTENANCE SHUTDOWN CHECKLIST

Project/Equipment Description:

4 Crude PSSR 2011 Major

The PSSR Team Leader convenes a meeting of a PSSR Review Team prior to start up of the facilities covered by this PSSR. The Team Leader chooses team members based on their understanding of the MOC (use the list below as a memory jogger). This team conducts a walkthrough if there is altered or additional equipment. The team verifies all MOCs are completed and confirms the change is ready to start up. The team generates a list of incomplete items identifying item owner and timetable for completion. Representatives acknowledge below their organization's work is complete (except as noted on the list below), that current QA programs were followed and that records will be retained for audit purposes.

Business Unit Rep:	Curry, David P.	Date:	11/10/2011
Determines all MOC's associated with this	facility are approved for Start-u	ıp	
Maintenace Shutdown Supervisor Rep:	Lackey, Mark W.	Date:	11/8/2011
Certifies that all planned and unplanned w	ork required for Start-Up in con	nplete e	except as noted on the list below
Verifies that existing quality assurance pro checks) were followed	ogress (e.g. PMI, Metal Craft Qu	ality As	surance, VOC valves, Loop
Put maintenance checklists and records in	files for audit purposes		
Other PSSR Review Team Members: (inclu Examples of other organizational groups t Engineering, Plant Protection, Utilities, En	hat may be included for shutdov		

Organization	Name	Date
Impact	Greenfield, Matthew R.	11/11/2011
Inspection	Beauregard, John T.	11/10/2011
DED	Corson, Andrew S.	11/10/2011

Miscellaneous Comments:

FER had no repairs required in C-1100 during this outage. Number 4 S/c piping replacements are complete and accepted by B31.3 piping standards.

Area Bussiness Manager Responsibilities:

- Verifies that operating procedures are in place for this particular Start-Up.
- Verifies that affected operating personnel are trained for this particular Start-Up.
- Confirms Start-Up checklists (i.e., initialed Start-Up/PreStart-Up section of Operating Procedures and referenced checklists such as blind lists) will be completed and put in files for audit purposes.

Incomplete items showing owner and timetable for completion (attach additional pages as necessary):

Exception MOC PSSR items from 23282	Owner Rojo, Raquel V.	Comp. By Rojo, Raquel V	Comp. On !#######	Notified ######
complete PSSR items for sub systems	Massaro, Vincent R.	Massaro, Vince	t########	4######
C7-84 PRD needs to be installed	Lenker, Ronald L.	Lenker, Ronald	11/7/2011	######
c u ,	Massaro, Vincent R.	Massaro, Vince	!######	##### ##
BE102-E3 Need Insulation	Massaro, Vincent R.	Lackey, Mark	12/1/2011	######
install 11FV043	Massaro, Vincent R.	Massaro, Vince	11/8/2011	######
BE349-01 remove hydro blind and install TI	Massaro, Vincent R.	Oneill, Patrick	11/6/2011	4######
BE349-i1 Cracked S/G	Massaro, Vincent R.	Oneill, Patrick	11/6/2011	

APPENDIX I PRE-START-UP SAFETY REVIEW FOR MAINTENANCE SHUTDOWN CHECKLIST

Project/Equipment Description:

4 Crude PSSR 2011 Major

BELS2-El. Hook Up tracing / Install Support Massaro, Vincent R. Principal In Jun (1902) In Jun (19	•		
V-1100 LVL Bridal hitting deluge system, needs to be adjusted Remove blind upstream ofK-1100 Disch. To C-1190 Remove Staging Remove temp need to pen BE102-E1 GENVLY-050 300# Remove temp Remove temp need to pen Detak on E-1107A/B Remove temp Remove temp chem clean pipe Remove temp chem clean pipe Remove temp pipe from reboilers Remove temp pipe from reboilers Remov	BE125-E1 Hook Up tracing / Install Support	Massaro, Vincent R.	Massaro, Vince #######
Remove blind upstream of K-1100 Disch. To C-1190 stanchon #6 Complete overflash demo work includes permanent blinds at C-1100 and Boiler makers on open line You stam tracing needs to be connected and insulated Massaro, Vincent R. Massaro, Vince Massar		Burkhart, Elijah R.	Burkhart, Elija
Complete overflash demo work includes permanent blinds at C-1100 and Boiler makers on open line FV000 steam tracing needs to be connected and insulated Massaro, Vincent R. Massaro, Vince 1###### \$#############################		Massaro, Vincent R.	Massaro, Vince
Remove Staging Massaro, Vincent R. Massaro, Vince !###### ###### ######################		Massaro, Vincent R.	Massaro, Vince 11/8/2011 #######
Remove Staging Massaro, Vincent R. Massaro, Vince t###### \$##### BE115-E1 K-1179 Seal Flush piping needs to be hooked up. Massaro, Vincent R. Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###### Remove Staging Massaro, Vincent R. Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###### BE104-01 Vent line not installed Massaro, Vincent R. BE131-01 Install PRD Massaro, Vincent R. Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###################################		Massaro, Vincent R.	Massaro, Vince *###### #######
BE115-E1 K-1179 Seal Flush piping needs to be hooked up. BE115-E1 K-1179 Seal Flush piping needs to be hooked up. Massaro, Vincent R. Massaro, Vince 11/8/2011 \$##### ##### #######################	FV000 steam tracing needs to be connected and insulated	Massaro, Vincent R.	Massaro, Vince
Remove Staging Massaro, Vincent R. Massaro, Vince the staging Massaro, Vincent R. Massaro, Vince the staging the staging Massaro, Vincent R. Lackey, Mark 12/1/2011 *##### *############################	Remove Staging	Massaro, Vincent R.	Massaro, Vince
Remove Staging Massaro, Vincent R. Massaro, Vince the think the think the stage of	Install PT 002	Massaro, Vincent R.	Massaro, Vince
Insulate new piping Massaro, Vincent R. Massaro, Vince t####################################	BE115-E1 K-1179 Seal Flush piping needs to be hooked up.	Massaro, Vincent R.	Massaro, Vince 11/8/2011 #######
BE104-01 Vent line not installed Massaro, Vincent R. Massaro, Vince 11/8/2011 \$##### BE104-03 Install PRD Massaro, Vincent R. Massaro, Vince 11/8/2011 \$##### BE131-01 Install BM/bleeder Massaro, Vincent R. Massaro, Vince 11/8/2011 \$##### Install Insulation Massaro, Vincent R. Massaro, Vince 11/8/2011 \$##### Install Insulation Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###### Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###### Massaro, Vincent R. Massaro, Vince 11/8/2011 \$###################################	Remove Staging	Massaro, Vincent R.	Massaro, Vince !###### #######
BE104-03 Install PRD Massaro, Vincent R. Massaro, Vincent R. Massaro, Vince 11/8/2011 ###### memove Staging Massaro, Vincent R. Massaro, Vincent R. Massaro, Vince 11/8/2011 ###### Install Insulation Massaro, Vincent R. Massaro, Vince 14####################################	Insulate new piping	Massaro, Vincent R.	Massaro, Vince *####################################
BE131-01 Install BM/bleeder Massaro, Vincent R. Massaro, Vince think think think think think the stage of t	BE104-01 Vent line not installed	Massaro, Vincent R.	Massaro, Vince +###### #########
remove Staging Massaro, Vincent R. Massaro, Vince the the thick of the temperature of the pipe from reboilers Massaro, Vincent R. Massaro, Vince the thick of the thick of the temperature of the pipe from reboilers Massaro, Vincent R. Massaro, Vince the thick of the thick of the temperature of the pipe from reboilers Massaro, Vincent R. Massaro, Vince the thick of the thick of the thick of the temperature of the temperat	BE104-03 Install PRD	Massaro, Vincent R.	Massaro, Vince 11/8/2011 #######
Install Insulation Massaro, Vincent R. Massaro, Vince t####################################	BE131-01 Install BM/bleeder	Massaro, Vincent R.	Massaro, Vince 11/8/2011 #######
staging in plant Massaro, Vincent R. Massaro, Vince t*##### ###### Missing insulation cap on BE102-E1 GENVLV-050 300# gate valve pipe at E-1102A/B/C E-1102,03,06, 07, 16E/F, C7-95 Recovered oil PRD staging not removed BE603-O1 Crude Feed MOV- actuator needs to be repaired. Massaro, Vincent R. Massaro, Vince t###### ###### 111571 and TI572 hook up and loop check on E-1107A/B incomplete P-1101A suction MOV needs electrical hookup and stroke. B-1107 pipe coating and insulation not installed Massaro, Vincent R. Preciado, Silvano E. Preciado, Silva t####################################	remove Staging	Massaro, Vincent R.	Massaro, Vince *###### ########
Missing insulation cap on BE102-E1 GENVLV-050 300# gate valve pipe at E-1102A/B/C E-1102,03,06, 07, 16E/F, C7-95 Recovered oil PRD staging not removed BE603-O1 Crude Feed MOV- actuator needs to be repaired. Massaro, Vincent R. Massaro, Vince the think the temporal of	Install Insulation	Massaro, Vincent R.	Massaro, Vince
gate valve pipe at E-1102A/B/C E-1102,03,06, 07, 16E/F, C7-95 Recovered oil PRD staging not removed BE603-01 Crude Feed MOV- actuator needs to be repaired. Massaro, Vincent R. Massaro, Vince !###### ###### ###### ###############	staging in plant	Massaro, Vincent R.	Massaro, Vince *####################################
BE603-O1 Crude Feed MOV- actuator needs to be repaired. Massaro, Vincent R. Massaro, Vince the theorem incomplete P-1101A suction MOV needs electrical hookup and stroke. Massaro, Vincent R. Massaro, Vince the theorem installed Massaro, Vincent R. Massaro, Vince the theorem incomplete PRD on NH# system blocked in w/ bleeder open upstream until S/U housekeeping clean up 4 CU switchgear house Massaro, Vincent R. Lackey, Mark 12/1/2011 ###### complete QA/QC docs Massaro, Vincent R. Lackey, Mark 12/1/2011 ###### remove temp chem clean pipe Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### Burkhart, Elijah R. Burkhart, Elija 11/6/2011 #######		Massaro, Vincent R.	Lackey, Mark 12/1/2011 #######
11TI571 and TI572 hook up and loop check on E-1107A/B incomplete P-1101A suction MOV needs electrical hookup and stroke. E-1107 pipe coating and insulation not installed Preciado, Silvano E. Preciado, Silvano E. Preciado, Silvano E. Complete QA/QC docs Massaro, Vincent R. Massaro, Vincent R. Preciado, Silvano E. Lackey, Mark 12/1/2011 ###### ############################		Massaro, Vincent R.	Massaro, Vince *####### #######
incomplete P-1101A suction MOV needs electrical hookup and stroke. Massaro, Vincent R. Massaro, Vince '####################################	BE603-01 Crude Feed MOV- actuator needs to be repaired.	Massaro, Vincent R.	Massaro, Vince
PRD on NH# system blocked in w/ bleeder open upstream until S/U housekeeping clean up 4 CU switchgear house Massaro, Vincent R. Lackey, Mark 12/1/2011 ###### complete QA/QC docs Massaro, Vincent R. Lackey, Mark 12/1/2011 ###### remove temp chem clean pipe Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ######		Massaro, Vincent R.	Massaro, Vince
PRD on NH# system blocked in w/ bleeder open upstream until S/U housekeeping clean up 4 CU switchgear house Massaro, Vincent R. Lackey, Mark tomplete QA/QC docs Massaro, Vincent R. Massaro, Vince Massaro, Vincent R. Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ######	P-1101A suction MOV needs electrical hookup and stroke.	Massaro, Vincent R.	Massaro, Vince *###### #######
housekeeping clean up 4 CU switchgear house Massaro, Vincent R. Lackey, Mark 12/1/2011 ###### complete QA/QC docs Massaro, Vincent R. Massaro, Vince 11/8/2011 ###### remove temp chem clean pipe Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ######	E-1107 pipe coating and insulation not installed	Massaro, Vincent R.	Lackey, Mark 12/1/2011 ######
complete QA/QC docs Massaro, Vincent R. Massaro, Vince 11/8/2011 ###### remove temp chem clean pipe Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ######		Preciado, Silvano E.	Preciado, Silva
remove temp chem clean pipe Burkhart, Elijah R. Burkhart, Elija 11/6/2011 ###### remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 #######	housekeeping clean up 4 CU switchgear house	Massaro, Vincent R.	Lackey, Mark 12/1/2011 ######
remove temp pipe from reboilers Burkhart, Elijah R. Burkhart, Elija 11/6/2011 #######	complete QA/QC docs	Massaro, Vincent R.	Massaro, Vince 11/8/2011 #######
	remove temp chem clean pipe	Burkhart, Elijah R.	Burkhart, Elija 11/6/2011 #######
repair valve 130 from list - at P-1195 Burkhart, Elijah R. Curry, David P. 11/5/2011 ######	remove temp pipe from reboilers	Burkhart, Elijah R.	Burkhart, Elija 11/6/2011 ######
	repair valve 130 from list - at P-1195	Burkhart, Elijah R.	Curry, David P. 11/5/2011 #######

PSSR Number: 6460

APPENDIX I PRE-START-UP SAFETY REVIEW FOR **MAINTENANCE SHUTDOWN CHECKLIST**

PSSR Number: 6460

Project/Equipment Description:

4 Crude PSSR 2011 Major

Valve BE-127 not installed (sitting on ground)

Burkhart, Elijah R.

Burkhart, Elija

11/6/2011 #######

Bottom TI lead broken off - try and repair

Burkhart, Elijah R.

Burkhart, Elija

11/7/2011 #######

I recommend this facility be placed in operation:

Approved for Operation:

Facilitator: Curry, David P.

Area Business Manager: Curry, David P.

Date: 11/10/2011

ABU Manager Date: 11/10/2011

Section 1 MANAGEMENT OF CHANGE (MOC)				ABU:		Plant:	Year:			
MOC	No: Originato	:	Date Issued: Passport No: EWO No:		D&R		4 Crude	2011		
242	255 Lee II, Geral	Lee II, Gerald W. 11/22/2011								
Section	Section 2 Reviewer: MOC Category: PSM: MOC Type: E		E	xpiration Date:	Other 7	Temporary Reason				
Preciac	do, Silvano E. S/D				Temporary		12/31/2016			
Project/Eq	uipment Title: UT Monitor 8"	4 S/C Pip	ping from C-1100	to P-1149/A (9	55-007-001)					
	n of Change:									
Inspection	s will monitor 8" 4 SIDECUT 9	55 -0 07-0	01 piping circuit th	nickness from C	C-1100 to P-114	19/A and i	replace as need	ed at ne	ext S/D opportunity	
	P.									
MOC will b	oe required if the change will:									
L	se the use of different feed, ch		•	•						
	se the use of different process				on, and protect	ive device	es or affect upst	ream/do	ownstream plants?	
	se the use of new or modified		-	-						
Alter	equipment siting, building, tra	iler locati	ions, roads or fire	protection?						
Requ	uire modifying existing and/or	levelopin	g new procedures	?		_				
Section 2						∐ Sim	ultaneously Beg	jin Cons	struction and Start-u	р
Stage	Pre-Implementation		Dept./Per		Date		Completed By		Reference	98
1	·		Respons	sible	Complete	 			T.elelelic	
	Design Review		Gish, Kurt E.			<u> </u>				
	Process Engineering Review Instrumentation Review				-					
	Control System Review				 	<u> </u>				
	Utilities Review					1				
	Environmental/Regulatory Re	view				 	•			
	Safety/Regulatory Review			•	†	<u> </u>				
	Building Permits Review	-				1				
	Mechanical Review		Leeds, Laura		1/5/2012	Leeds,	Laura			
	Inspection Review		Beauregard, Jol	hn T.	12/2/2011		gard, John T.			·
Metallurgy Review		Prasad, Praneil		*****		, Praneil-Mahara	nj			
Contruction Review										
Leak Seal Review										
	Relief System Review)						
	Infrastructure Review									
PHA/HSE Review			Preciado, Silvar	no E.						
A 45	-1		-1			-				
Authoriza	ation to Implement Change (Bo	egin Cons	struction): A	pprover:				Date:		
Stage	Pre-Startup		Dept./Per		Date		Completed By		Reference	25
2	<u> </u>		Respons	SIDIE	Complete	<u> </u>				
1	Procedures Review Communication/Training									
	Pre Start-up Safety Review				<u>. </u>	 	**			
i	The Start-up Salety Neview	•				 				
	1				<u> </u>	<u> </u>				
Authoriza	ation to Start-Up Change:		Α	pprover:				Date:		
Extension	on of Temporary Change	App	prover:		,	Expir	ation Date:	Exte	ntion Reason	
Approve		1.4-								
<u></u>	ı		D170		Dot-				1	
Stage	Post-Startup		Dept./Per Respons		Date Complete		Completed By		Reference	es
3 Communication/Training					1 2	1				
	Process Safety Information									
Change	Change in Place Povious Approves:									
Change in Place - Reviews, Approver: Date:										
	Q = 1 P = 174									
MOC C	ancelled:	Appro				Date:				
		Canc	ellation Reason	: 						
Note 1:	Emergency request for ch	ange sh	ould be routed l	by the Approv	er on the nex	t working	day Reta	ain Origin	nal in Division for five	Years

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	·
Person Responsible	Gish, Kurt E.
Completed by	
Date Completed	

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.	

*When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255	
Filing Reference		
Person Responsible	Gish, Kurt E.	
Completed by		
Date Completed		

Project/Equipment Description:

Inspections will monitor 8" 4	4 SIDECUT 955-007-001 piping circuit t	hickness from C-1100 to P-1149/A a	ind replace as needed at next S/D oppor	tunity.	
	•				

	·		
ENGINEERING REVIEW		SUMMARY OF REVIEW*	
 □ BIN Best Practic □ Civil & Structural □ Equipment Data Sheet □ Equipment Specification □ Fire Protection □ Hot Tap □ P&ID's Change due to New / Modified equipment □ P&ID's Change - Field condition not matching existing 	a P&ID		
☐ Plot Plan ☐ Seismic ☐ SIS Update ☐ Temporary Leak Repair EQUIPMENT REVIEW			
Columns & Pressure Vessels Compressor, Blowers & Mechanical Equipment Concrete & Steel Structure, Walks and Stair Control Rooms & Building Exchangers, Condensers, Heaters & Cooling Tower Facilities & Siting Foundation Furances & Boilers Honeywell Honeywell Process Simulator	☐ Instrumentation ☐ Insulation ☐ Noise ☐ Piping ☐ Pumps & Drivers ☐ Relief & Venting Systems ☐ Sewers, Roads & Miscellaneous ☐ Tanks ☐ Update Refinery Relief Study ☐ Utility Systems		
□ H\/ΔC		*When possible include copies of documents refer	enced in the summary.

Tuesday, August 07, 2012

Page 2 of 3

You have been assigned a Design Engineering Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Gish, Kurt E.
Completed by	
Date Completed	
·	

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickne	,	

*When possible include copies of documents referenced in the summary.

MECHANICAL & Q.A. REVIEW CHECKLIST

You have been assigned a Mechanical & Q.A. Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Leeds, Laura
Completed By	Leeds, Laura
Date Completed	1/5/2012

Project/Equipment Description:

Inspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.

MECHANICAL:	Q.A.:			
☐ Alarm/Sampling Requirements	☐ ASTM Standards			
☐ Civil/Structual Engineering Requirements	☐ Control & Monitoring Requirements			
☐ Electrical Engineering Requirements	☐ Fitness for Service Evaluation			
☐ Instrument/Control Engineering Requirements	☐ Honeywell Process Simulator			
, man	☐ IMI Machinery Condition			
☐ Normal Control Requirements Equipment Specification and Rating	☐ Mechanical Integrity			
Relief and Pressure Relief Devices Setting and Capacity	☐ Mechanical Integrity Program			
Utilities Connection Permits	MFG-5545, Drafting Work Request attached, if required			
	Positive Materials Indentification			
REQUIREMENT:	☐ Preventative Maintenance Requirement			
☐ API Standards	☐ Pre Start-up Safety Review			
☐ ASME Codes & Standards	☐ Process Safety Information Limits			
☑ Inspection/Monitoring Requirements	☐ SOCO Tags			
☐ Process Flow/Piping Drawings	☐ UT Testing			

SUMMARY OF REVIEW*

External inspection of piping has not been reliable in the past for predicting thickness and failure rates at these temperatures. Recommended that external corrosion probes with wireless technology be installed on line for continuous data collection.

Consistently monitoring 4S/C piping is better than random API inspection. But continous corrosion probes should be installed at earliest convenience for future S/D input

*When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

INSPECTION REVIEW CHECKLIST

You have been assigned a Inspection Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255	
Filing Reference		
Person Responsible	Beauregard, John T.	
Completed By	Beauregard, John T.	
Date Completed	12/2/2011	

Project/Equipment Description:

nspections will monitor 8" 4 SIDECUT 955-007-001 piping circuit thickness from C-1100 to P-1149/A and replace as needed at next S/D opportunity.				
		and the second s		

INSPECTION:		
☐ Additional Surveillance Required		
☐ API Standards		
☐ ASME Codes & Standards		
☐ ASTM Standards		
☐ Control Monitoring Requirements		
☐ Electrical Inspection		
☐ Fitness for Service Evaluation	•	
☐ Honeywell		
☐ Honeywell Process Simulator		
☐ Inspection/Monitoring Requirements		
☐ Non-Destructive Examination		
☐ Normal Control Requirements		
☐ Positive Materials Indentification		
☐ Relief and Pressure Relief Devices Setting and Capacity		
☐ Texas Nuclear (Metallurgy)		
☐ UT Testing		
☐ VOC Tagging Requirements		

SUMMARY OF REVIEW*

Inspection will provide a drawing with monitoring locations.

For the P-1149 suction piping t(min):

1.8" pipe:

a.Pressure t(min) = 0.018 inch

b.Structural t(min) = 0.036 inch

2.10" pipe:

a.Pressure t(min) = 0.022 inch

b.Structural t(min) = 0.036 inch

So, I would use the 0.036 inch as the ultimate t(min) for this section of pipe. If piping get below 0.100 inches, we should consider some sort of clamp or wrap. After talking to inspections, this might also be a good location for a corrosion probe.

Hope this helps,

If you have any questions, please do not hesitate to contact me.

Thanks for the help, Patrick Murphy

*When possible include copies of documents referenced in the summary.

Tuesday, August 07, 2012

METALLURGY REVIEW CHECKLIST

You have been assigned a Metallurgy Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	24255
Filing Reference	
Person Responsible	Prasad, Praneil-Maharaj
Completed by	Prasad, Praneil-Maharaj
Date Completed	11/28/2011

			Date Comp	oleted 11/28/2011	
Project/Equipment Desc	ription:				
		ng circuit thickness fr	om C-1100 to P-1149/A and repl	ace as needed at ne	d S/D opportunity.
·				·	
Refinery Process Stream:	#4 Sidecut				
Service Description:	Hydrocarbons				
Process:	Hydrocarbon		dust-co-control-co-co-co-co-co-co-co-co-co-co-co-co-co-		
Other:					
Operating Tempature:					
Design Tempature:			Design Pressure:		- na sa
Product Form:	·		Piping Classification:		
Equipment					
New Material Type:		и			
Connection for	Piping Specification	ı :			☐ Stress Relieved
If Required	l, what is stress relic	eving temperature	8	and Time	•
Exchanger Bundle (Chec	ck all Applicable)				
U-Bend 7	Гube Bundle	U-Bend A	Arca Stress Relieved?		
☐ Finned T	ube Bundle	☐ Finned A	rea Stress Relieved?	•	
☐ Straight	Tube				
☐ Tube She	eet and tubes made o	of different alloys	Explain:		
☐ Cladded	Tube sheet. Which	side is clad?			
Other _					
		-			
Specification Change:				*	
			•		
Other:	Manual field data ha	as been historically	inaccurate due to the elevate	d temperatures. Re	commend using
	wireless corrosion p			,	
	t				

Tuesday, August 07, 2012 *When possible include copies of documents referenced in the summary.